CONTENTS

ORIGINAL PAPERS

PAGE

Adams, L. W. Small mammal use of an interstate highway median strip 175
Ambasht, R. S. See **Sharma, E.**
Andrew, M. H. See **Hacker, J. B.**
Bamber, R. N. See **Henderson, P. A.**
Barr, N. J. *See* **Cromer, R. N.**
Bas, N., Jenkins, D. & Rothery, P. Ecology of otters in Northern Scotland. V. The distribution of otter (*Lutra lutra*) faeces in relation to bankside vegetation on the River Dee in summer 1981 507
Bayfield, N. G., Urquhart, U. H. & Rothery, P. Colonization of bulldozed track verges in the Cairngorm mountains, Scotland 343
Berrie, A. D. See **Mackey, A. P.**
Bobeck, B., Boyce, M. S. & Kosobucka, M. Factors affecting red deer (*Cervus elaphus*) population density in south-eastern Poland 881
Bodderell, J. E. See **Roberts, H. A.**
Boerner, R. E. J. Foliar nutrient dynamics and nutrient use efficiency of four deciduous tree species in relation to site fertility 1029
Boyce, M. S. See **Bobek, B.**
Bradshaw, A. D. See **Costigan, P. A.**
Bradshaw, H. D. See **Brinson, M. M.**
Brinson, M. M., Bradshaw, H. D. & Kane, E. S. Nutrient assimilative capacity of an alluvial floodplain 1041
Burn, A. J. Life tables for the carrot fly, *Psila rosae* 891
Carey, J. R. See **Mangel, M.**
Cargill, S. M. & Jefferies, R. L. Nutrient limitation of primary production in a sub-arctic salt marsh 657
Cargill, S. M. & Jefferies, R. L. The effects of grazing by lesser snow geese on the vegetation of a sub-arctic salt marsh 669
Carter, N. See **Leather, S. R.**
Chancellor, R. J. See **Froud-Williams, R. J.**
Chandler-Mortimer, A. See **Lefèbvre, C.**
Chroston, J. R. See **Leather, S. R.**
Clarke, M. J. O. See **Reynolds, C. S.**
Clements, R. O. See **Moore, D.**
Clout, M. N. & Gaze, P. D. Effects of plantation forestry on birds in New Zealand . 795
Conover, M. R. Response of birds to different types of food repellents 437
Cook, S. J. & Ratcliff, D. A study of the effects of root and shoot competition on the growth of green panic (*Panicum maximum* var. trichoglume) seedlings in an existing grassland using root exclusion tubes 971
Cooling, D. A. See **Mackey, A. P.**

Costigan, P. A., Bradshaw, A. D. & Gemmell, R. P. The reclamation of acidic colliery spoil. IV. The effects of limestone particle size and depth of incorporation 377
Crisp, D. T., Mann, R. H. K. & Cubby, P. R. Effects of impoundment upon fish populations in afferent streams at Cow Green Reservoir 739
Cromer, R. N., Tompkins, D., Barr, N. J., Williams, E. R. & Stewart, H. T. L. Litter-fall in a Pinus radiata forest: the effect of irrigation and fertilizer treatments 313
Crossley Jr, D. A. See **House, G. J.**
Cubby, P. R. See **Crisp, D. T.**
Curry, J. P. See **Purvis, G.**
Dawson, K. P. See **Whitehead, D. C.**
Day, J. E. See **Majer, J. D.**
Dickinson, N. M. Seasonal dynamics and compartmentation of nutrient in a grassland meadow in lowland England 695
Dottie, D. J. See **Satchell, J. E.**
Drennan, D. S. H. See **Froud-Williams, R. J.**
Fraser, D. A simple relationship between removal rate and age–sex composition of removals for certain animal populations 97
Froud-Williams, R. J., Chancellor, R. J. & Drennan, D. S. H. The effects of seed burial and soil disturbance on emergence and survival of arable weeds in relation to minimal cultivation 629
Gardener, S. M. See **Leather, S. R.**
Gaze, P. D. See **Clout, M. N.**
Gemmell, R. P. See **Costigan, P. A.**
Green, R. E. The feeding ecology and survival of partridge chicks (*Alectoris rufa* and *Perdix perdix*) on arable farmland in East Anglia 817
Greig-Smith, P. W. & Wilson, G. M. Patterns of activity and habitat use by a population of bullfinches (*Pyrrhula pyrrhula*) in relation to bud-feeding in orchards 401
Hacker, J. B. Genetic variation in seed dormancy in *Digitaria milanjiana* in relation to rainfall at the collection site 947
Hacker, J. B., Andrew, M. H., McIvor, J. G. & Mott, J. J. Evaluation in contrasting climates of dormancy characteristics of seed of *Digitaria milanjiana* 961
Hanley, T. A. Habitat patches and their selection by wapiti and black-tailed deer in a coastal montane coniferous forest 423
Hanson, P. R. See **Tuite, C. H.**
Heagle, A. S. See **Unsworth, M. H.**
Henderson, P. A., Turnpenny, A. W. H. & Bamber, R. N. Long-term stability of a sand smelt (*Atherina presbyter* Cuvier) population subject to power station cropping 1
Hewson, R. Scavenging and predation upon sheep and lambs in west Scotland . . 843
Hopkin, S. P. & Martin, M. H. Assimilation of zinc, cadmium, lead and copper by the centipede *Lithobius variegatus* (Chilopoda) 535
Hopkins, P. J. & Webb, N. R. The composition of the beetle and spider faunas on fragmented heathlands 935
Hopkins, P. J. See **Webb, N. R.**

House, G. J., Stinner, B. R., Crossley Jr, D. A. & Odum, E. P. Nitrogen cycling in conventional and no-tillage agro-ecosystems: analysis of pathways and processes 991
Iwasa, Y. See **Kakehashi, M.**
Jefferies, R. L. See **Cargill, S. M.**
Jenkins, D. See **Bas, N.**
Jess, S. See **Mowat, D. J.**
Jolliffe, P. A., Minjas, A. N. & Runeckles, V. C. A reinterpretation of yield relationships in replacement series experiments 227
Kabay, E. D. See **Majer, J. D.**
Kakehashi, M., Suzuki, Y. & Iwasa, Y. Niche overlap of parasitoids in host–parasitoid systems: its consequence to single *v.* multiple introduction controversy in biological control 115
Kane, E. S. See **Brinson, M. M.**
Kosobucka, M. See **Bobek, B.**
Leather, S. R., Carter, N., Walters, K. F. A., Chroston, J. R., Thornback, N., Gardner, S. M. & Watson, S. J. Epidemiology of cereal aphids on winter wheat in Norfolk, 1979–1981 103
Lefèbvre, C. & Chandler-Mortimer, A. Demographical characteristics of the herb *Ameria maritima* (Plumbaginaceae) on zinc-lead mine wastes 255
Lesser, V. M. See **Unsworth, M. H.**
Liau, S. S. See **Wood, B. J.**
Lindberg, S. E. See **Lovett, G. M.**
Lovett, G. M. & Lindberg, S. E. Dry deposition and canopy exchange in a mixed oak forest as determined by analysis of throughfall 1013
Mackey, A. P., Cooling, D. A. & Berrie, A. D. An evaluation of sampling strategies for qualitative surveys of macro-invertebrates in rivers using pond nets . . . 515
Madsen, H. The effect of water conditioned by either *Helisoma duryi* or *Biomphalaria camerunensis* on the growth and reproduction of juvenile *B. camerunensis* (Pulmonata: Planorbidae) 757
Majer, J. D., Day, J. E., Kabay, E. D. & Perriman, W. S. Recolonization by ants in bauxite mines rehabilitated by a number of different methods 355
Malechek, J. C. See **Provenza, F. D.**
Mangel, M., Plant, R. E. & Carey, J. R. Rapid delimiting of pest infestations: a case study of the Mediterranean fruit fly 563
Mann, R. H. K. See Crisp, D. T.
Marrs, R. H. Birch control on lowland heaths: mechanical control and the application of selective herbicides by foliar spray 703
Martin, M. H. See **Hopkin, S. P.**
McIvor, J. G. See **Hacker, J. B**
Minjas, A. N. See **Jolliffe, P. A.**
Moore, D. & Clements, R. O. Stem-borer larval infestations of ryegrass swards under rotationally grazed and cut conditions 581
Morishima, H. See **Sano, Y.**
Morton, A. J. & Obot, E. A. The control of *Echinocholoa stagnina* (Retz.) P. Beauv by harvesting for dry season livestock fodder in Lake Kainji, Nigeria—a modelling approach 687
Mott, J. J. See **Hacker, J. B.**

Mowat, D. J. & Jess, S. Oviposition by frit fly, *Oscinella frit*, on young ryegrass seedlings 915
Nachman, G. Estimates of mean population density and spatial distribution of *Tetranychus urticae* (Acarina: Tetranychidae) and *Phytoseiulus persimilis* (Acarina: Phytoseiidae) based upon the proportion of empty sampling units . 903
Obot, E. A. See **Morton, A. J.**
Odum, E. P. See **House, G. J.**
Osborne, B. C. Habitat use by red deer (*Cervus elaphus* L.) and hill sheep in the West Highlands 497
Osborne, P. Bird numbers and habitat characteristics in farmland hedgerows . . 63
Owen, M. See **Tuite, C. H.**
Pellew, R. A. Food consumption and energy budgets of the giraffe 141
Perriman, W. S. See **Majer, J. D.**
Picton, H. D. Climate and the prediction of reproduction of three ungulate species . 869
Pitman, J. M. See **Roberts, J.**
Plant, R. E. See **Mangel, M.**
Powell, G. V. N. Reproduction by an altricial songbird, the red-winged blackbird, in fields treated with the organophosphate insecticide fenthion 83
Prince, P. A. & Walton, D. W. H. Automated measurement of meal sizes and feeding frequency in albatrosses 789
Provenza, F. D. & Malechek, J. C. Diet selection by domestic goats in relation to blackbrush twig chemistry 831
Pulliainen, E. Changes in the composition of the autumn food of *Perdix perdix* in W. Finland over 20 years 133
Purvis, G. & Curry, J. P. The influence of weeds and farmyard manure on the activity of Carabidae and other ground–dwelling arthropods in a sugar beet crop 271
Ratcliff, D. See **Cook, S. J.**
Reynolds, C. S., Wiseman, S. W. & Clarke, M. J. O. Growth- and loss-rate responses of phytoplankton to intermittent artificial mixing and their potential application to the control of planktonic algal biomass 11
Roberts, H. A. & Boddrell, J. E. Seed survival and seasonal emergence of seedlings of some ruderal plants 617
Roberts, J., Wallace, J. S. & Pitman, R. M. Factors affecting stomatal conductance of bracken below a forest canopy 643
Rothery, P. See **Bas, N.**
Rothery, P. See **Bayfield, N. G.**
Runeckles, V. C. See **Jollife, P. A.**
Salick, J. & Tho Yow Pong. An analysis of termite fauna in Malayan rainforests . . 547
Sano, R. See **Sano, Y.**
Sano, Y., Sano, R. & Morishima, H. Neighbour effects between two co-occurring rice species, *Oryza sativa* and *O. glaberrima* 245
Satchell, J. E. & Dottie, D. J. Factors affecting the longevity of earthworms stored in peat 285
Sharma, E. & Ambasht, R. S. Seasonal variation in nitrogen fixation by different ages of root nodules of *Alnus nepalensis* plantations, in the eastern Himalayas 265
Sohlenius, B. & Wasilewska, L. Influence of irrigation and fertilization on the nematode community in a Swedish pine forest soil 327

Standen, V. Production and diversity of enchytraeids, earthworms and plants in fertilized hay meadow plots 293
Stewart, H. T. L. *See* **Cromer, R. N.**
Stinner, B. R. See **House, G. J.**
Suzuki, Y. See **Kakehashi, M.**
Thomas, H. Effects of drought on growth and competitive ability of perennial ryegrass and white clover 591
Thornback, N. See **Leather, S. R.**
Tho Yow Pong. See **Salick, J.**
Tompkins, D. See **Cromer, R. N.**
Tuite, C. H., Hanson, P. R. & Owen, M. Some ecological factors affecting winter wildfowl distribution on inland waters in England and Wales and the influence of water-based recreation 41
Turnpenny, A. W. H. See **Henderson, P. A.**
Underhill-Day, J. C. Population and breeding biology of marsh harriers in Britain since 1900 773
Unsworth, M. H., Lesser, V. M. & Heagle, A. S. Radiative interception and the growth of soybeans exposed to ozone in open-top field chambers 1059
Urquhart, U. H. See **Bayfield, N. G.**
Wallace, J. S. See **Roberts, J.**
Walters, K. F. A. See **Leather, S. R.**
Walton, D. W. H. See **Prince, P. A.**
Wasilewska, L. See **Sohlenius, B.**
Watson, S. J. See **Leather, S. R.**
Webb, N. R. & Hopkins, P. J. Invertebrate diversity on fragmented *Calluna* heathland 921
Webb, N. R. See **Hopkins, P. J.**
Welch, D. Studies in the grazing of heather moorland in north-east Scotland. I. Site descriptions and patterns of utilization 179
Welch, D. Studies in the grazing of heather moorland in north-east Scotland. II. Response of heather 197
Welch, D. Studies in the grazing of heather moorland in north-east Scotland. III. Floristics 199
Whitehead, D. C. & Dawson, K. P. Nitrogen, including ^{15}N-labelled fertilizer nitrogen, in components of a grass sward 983
Williams, E. D. Changes during 3 years in the size and composition of the seed bank beneath a long-term pasture as influenced by defoliation and fertilizer regime 603
Williams, E. R. See **Cromer, R. N.**
Wilson, G. M. See **Greig-Smith, P. W.**
Wiseman, S. W. See **Reynolds, C. S.**
Wood, B. J. A long-term study of *Rattus tiomanicus* populations in an oil palm plantation in Johore, Malaysia. I. Study methods and population size without control 445
Wood, B. J. & Liau, S. S. A long-term study of *Rattus tiomanicus* populations in an oil palm plantation in Johore, Malaysia. II. Recovery from control and economic aspects 465
Wood. B. J. & Liau, S. S. A long-term study of *Rattus tiomanicus* populations in an oil palm plantation in Johore, Malaysia. III. Bionomics and natural regulation 473

REVIEWS

Atkinson, D., Bhat, K. K. S., Coutts, M. P., Mason, P. A. & Read, D. J. *Tree Root Systems and their Mycorrhizas* 1082
Bornkamm, R., Lee, J. A. & Seaward, M. R. D. (Eds.) *Urban Ecology* 727
Bourliere, F. (Ed.) *Ecosystems of the World, 13: Tropical Savannas* 718
Causton, D. R. *A Biologist's Home Mathematics* 1087
Centre for Overseas Pest Research. *The Locust and Grasshopper Agricultural Manual* 391
Cope, C. B., Fuller, W. H. & Willetts, S. L. *The Scientific Management of Hazardous Wastes* 398
Coughtrey, P. J., Bell, J. N. B. & Roberts, T. M. *Ecological Aspects of Radionuclide Release* 1098
Crawley, M. J. *Studies in Ecology, Volume 10: Herbivory* 1089
Etherington, J. E. *Wetland Ecology* 391
Fuller, R. M. *Ecological Mapping from Ground, Air and Space* 726
Georghiou, G. P. & Saito, (Eds.) *Pest Resistance to Pesticides* 731
Grace, J. *Plant–Atmospheric Relationships* 396
Greig-Smith, P. *Quantitative Plant Ecology. 3rd edn.* 1085
Golley, F. B. (Ed.) *Ecosystems of the World, 14A: Tropical Rain Forest Ecosystems; Structure and Function* 719
Gulland, J. A. *Fish Stock Assessment* 736
Hallberg, R. (Ed.) *Environmental Biogeochemistry* 734
Harrison, R. M. *Pollution: Causes, Effects and Control* 729
Hill, D. S. *Agricultural Insect Pests of the Tropics and their Control* 721
Hodkinson, I. D. & Hughes, M. K. *Insect Herbivory* 394
Holzner, W., Werger, M. J. A. & Ikusima, I. *Geobotany 5: Man's Impact on Vegetation* 729
Houston, D. B. *The Northern Yellowstone Elk: Ecology and Management* 393
Juniper, B. E. & Jeffree, C. E. *Plant Surfaces* 726
Kulikov, N. V. & Molchanova, I. V. *Continental Radioecology* 1099
Lange, O. L., Nobel, P. S., Osmond, C. B. & Zeigler, H. (Eds.) *Encyclopedia of Plant Physiology. Volume 12A* 724
Lange, O. L., Nobel, P. S., Osmond, C. B. & Zeigler, H. (Eds.) *Encyclopedia of Plant Physiology. Volume 12B* 395
Lange, O. L., Nobel, P. S., Osmond, C. B. & Zeigler, H. (Eds.) *Encyclopedia of Plant Physiology. Volume 12C* 724
Langford, T. E. *Electricity Generation and the Ecology of Natural Waters* 737
Lebrun, P., Andre, H. M. De Medts, A., Gregoire-Wibo, C. & Wauthy, G. (Eds.) *New Trends in Soil Biology* 1093
Lee, K. E. (Ed.) *Proceedings of the 3rd Australasian Conference on Grassland Invertebrate Ecology* 1090
Leigh, E. G., Rand, A. S. & Windsor, D. M. *The Ecology of a Tropical Rain Forest: Seasonal Rhythms and Long Term Changes* 720
Lewis III, R. R. *Creation and Restoration of Coastal Plant Communities* 397
Loveless, A. R. *Principles of Plant Biology for the Tropics* 723
Marshall, K. C. (Ed.) *Advances in Microbial Ecology* 390

Martin, M. H. & Coughtrey, P. J. *Biology Monitoring of Heavy Metal Pollution* . . 732
Matsumura, F. & Krishna Mutri, C. R. (Eds.) *Biodegradation of Pesticides* . . . 730
Mead, R. & Curnow, R. N. *Statistical Methods in Agriculture and Experimental Biology* 387
Mloszewski, M. J. *The Behaviour and Ecology of the African Buffalo* 1088
Packham, J. R. & Harding, D. J. L. *Ecology of Woodland Processes* 1082
Patin, S. A. *Pollution and the Biological Resources of the Oceans* 388
Pianka, E. R. *Evolutionary Ecology* 1086
Plumb, R. T. & Thresh, J. M. (Eds.) *Plant Virus Epidemiology. The Spread and Control of Insect-borne Viruses* 1091
Putman, R. J. *Carrion and Dung. The Decomposition of Animal Wastes* 1092
Robb, D. A. & Pierpoint, W. S. *Metals and Micronutrients: Uptake and Utilization by Plants* 725
Roberts, R. D. & Roberts, T. M. (Eds.) *Planning and Ecology* 1096
San Pietro, A. (Ed.) *Biosaline Reserach: a Look to the Future* 1084
Satchell, J. E. (Ed.) *Earthworm Ecology: from Darwin to Vermiculture* 1091
Seaward, M. R. D. & Hitch, C. J. R. *Atlas of Lichens of the British Isles* 397
Sutton, S. L., Whitmore, T. C. & Chadwick, A. C. *Tropical Rain Forest: Ecology and Management* 1081
Thornton, J. A. (Ed.) *Lake McIlwaine (The Eutrophication and Recovery of a Tropical African Man-made Lake)* 389
Tucker, R. E., Young, A. L. & Gray, A. P. (Eds.) *Human and Environmental Risks of Chlorinated Water Dioxins and Related Compounds* 736
Ulrich, B. & Pankrath, J. (Eds.) *Effects of Accumulation of Air Pollutants in Forest Ecosystems* 735
Vicuña, F. O. (Ed.) *Antarctic Resources Policy: Scientific, Legal and Political Issues* 1097
Vink, A. P. A. *Landscape Ecology and Land Use* 728
Ward Whicker, F. W. & Schultz, V. *Radioecology: Nuclear Energy and the Environment* 733
Wardley-Smith, J. (Ed.) *The Control of Oil Pollution* 1100
Warren, A. & Goldsmith, F. B. (Eds.) *Conservation in Perspective* 1095
Way, J. M. (Ed.) *Management of Vegetation* 1094
Wein, R. W., Riewe, R. R. & Methven, I. R. (Eds.) *Resources and Dynamics of the Boreal Zone* 1083
West, N. E. (Ed.) *Ecosystems of the World, 5: Temperate Deserts and Semi Deserts* 717
Williams, W. D. *Life in Inland Waters* 738
Youdeowei, A. & Service, M. W. *Pest and Vector Management in the Tropics* . . 722